

PENDING CLAIMS

1. (Currently Amended) A tissue extraction and maceration device, comprising:
an outer tube having a substantially open distal end that is adapted to be placed on a tissue surface;
a shaft rotatably disposed within the outer tube and movable between a first, proximal position in which the shaft is fully disposed within the outer tube, and a second, distal position in which a portion of a distal end of the shaft extends through the substantially open distal end of the outer tube;
a tissue harvesting tip formed on the distal end of the shaft, the tissue harvesting tip being effective to excise a tissue sample; and
a cutting member coupled to the shaft at a position proximal to the tissue harvesting tip, the cutting member being effective to macerate a tissue sample excised by the tissue harvesting tip; and
a sizing screen disposed within the outer tube and positioned proximal to the tissue harvesting tip and the cutting member.
2. (Original) The device of claim 1, further comprising a biasing element effective to bias the shaft to the proximal position.
3. (Original) The device of claim 2, further comprising a trigger mechanism connected to the shaft, wherein, upon actuation, the trigger mechanism is effective to overcome the biasing force to move the shaft from the proximal position to the distal position.
4. (Original) The device of claim 1, wherein the open distal end of the outer tube is adapted to form a seal with a tissue surface.
5. (Original) The device of claim 1, wherein the substantially open distal end of the outer tube is defined by an edge wall that is angled with respect to a longitudinal axis of the outer tube.
6. (Original) The device of claim 5, wherein the angle is in the range of about 30° to 75°.

7. (Original) The device of claim 5, wherein the angle is about 40°.
8. (Original) The device of claim 5, wherein the edge wall includes surface features formed thereon.
9. (Original) The device of claim 8, wherein the surface features comprise ridges.
10. (Original) The device of claim 1, wherein the cutting member comprises at least one blade member extending radially from the shaft.
11. (Original) The device of claim 10, wherein each blade member has a shape selected from the group consisting of a rectangular shape, a curved shaped, a triangular shape, a square shape, an irregular shape, and combinations thereof.
12. (Original) The device of claim 1, wherein the harvesting tip comprises a cone-shaped member having a plurality of cutting teeth formed on an outer surface thereof.
13. (Original) The device of claim 1, wherein the harvesting tip comprises a substantially semi-cylindrical housing having a cutting surface formed around a periphery thereof.
14. (Original) The device of claim 1, wherein the harvesting tip is adapted to penetrate tissue to remove a predetermined volume of tissue when moved from the proximal position to the distal position.
15. (Original) The device of claim 14, wherein the predetermined volume of tissue, per tissue sample, is in the range of about 0.5 cm³ to 1.5 cm³.
16. (Original) The device of claim 14, wherein the predetermined volume of tissue, per tissue sample, is about 0.9 cm³.

17. (Cancelled).

18. (Currently Amended) The device of claim 1[[17]], wherein the sizing screen includes openings formed therein, wherein the openings are defined by a wall having an upstream edge that is effective to cut tissue having a size greater than the circumference of the openings.

19. (Currently Amended) The device of claim 1[[17]], wherein the sizing screen includes openings formed therein and having a diameter in the range of about 0.7 mm to 1.3 mm.

20. (Currently Amended) The device of claim 1[[17]], wherein the sizing screen includes openings formed therein and having a diameter of about 1.0 mm.

21. (Original) The device of claim 1, further comprising a driver mechanism coupled to the shaft and effective to rotate the shaft at a speed in the range of about 100 to 5000 rpm.

22. (Original) The device of claim 1, wherein the harvesting tip of the shaft is adapted to extend beyond the outer tube by a predetermined distance.

23. (Original) The device of claim 22, wherein the predetermined distance is in the range of about 1 mm to 5 mm.

24. (Original) The device of claim 22, wherein the predetermined distance is about 3 mm.

25. (Original) The device of claim 1, wherein the outer tube is adapted to be coupled to a vacuum pump that is effective to draw tissue through at least a portion of the outer tube.

26-30 (Cancelled).

31. (New) A tissue harvesting device, comprising:
a handle housing having a trigger coupled thereto;
an outer tube extending from the handle housing and rotatable relative to the handle housing;

a shaft rotatably disposed within the outer tube and movable between a first, proximal position in which the shaft is fully disposed within the outer tube, and a second, distal position in which a portion of a distal end of the shaft extends through a substantially open distal end of the outer tube;

a tissue harvesting tip formed on the distal end of the shaft, the tissue harvesting tip being effective to excise a tissue sample; and

a cutting member coupled to the shaft at a position proximal to the tissue harvesting tip, the cutting member being effective to macerate a tissue sample excised by the tissue harvesting tip.

32. (New) A tissue harvesting device, comprising:

a substantially hollow cylindrical member having a substantially flattened distal end and a plurality of cutting teeth formed around an outer sidewall thereof and having openings formed therein and extending into an inner lumen of the cylindrical member, the plurality of cutting teeth protruding from the outer sidewall such that the plurality of cutting teeth are effective to excise a plurality of tissue samples upon axial rotation of the cylindrical member and to deliver the plurality of tissue samples to the inner lumen.